

STUDIES OF PAPUASIAN PLANTS, I*

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A SERIES of papers, of which this is the first, is planned to discuss certain groups of plants represented by the accumulated material in the herbarium of the Arnold Arboretum from New Guinea and the Solomon Islands. The larger part of the New Guinea specimens has been obtained by Mr. L. J. Brass, botanist of the Richard Archbold Expeditions, while the material from the Solomon Islands was chiefly collected by Mr. Brass and Mr. S. F. Kajewski. This series is expected to be supplementary to that of Drs. E. D. Merrill and L. M. Perry, *Plantae Papuanae Archboldianae*, now appearing in the *Journal of the Arnold Arboretum*.

All specimens cited in this series, unless otherwise mentioned, are deposited in the herbarium of the Arnold Arboretum.

MYRISTICACEAE

Since Dr. F. Markgraf (*Bot. Jahrb.* 67: 143–170. 1935) has recently and ably summarized the Papuan species of Myristicaceae, no attempt is here made to discuss all of the recently collected specimens or to revise the group. The present treatment is limited merely to a discussion of range-extensions or specimens of unusual interest and to descriptions of 16 species which appear to be new. The order of treatment essentially follows that adopted by Markgraf. For the purposes of this study I have examined specimens deposited in the following herbaria: Arnold Arboretum (A), New York Botanical Garden (NY), U. S. National Herbarium (US), and Yale School of Forestry (Y); I am indebted to the Directors and Curators of these institutions for the privilege of borrowing material. The place of deposit of specimens is shown by the indicated letters in parentheses; when no place of deposit is shown, the specimen has been seen only in the herbarium of the Arnold Arboretum.

HORSFIELDIA Willd.

Horsfieldia trifida sp. nov.

Arbor ad 26 m. alta ubique praeter inflorescentiam et ramulos novos inconspicue ferrugineo-puberulos glabra, cortice crassa nigrescente,

*Botanical Results of the Richard Archbold Expeditions.

trunco ad 60 cm. diametro, ramulis subteretibus; petiolis gracilibus leviter canaliculatis 11–17 mm. longis; laminis papyraceis vel chartaceis anguste oblongis, 22–28 cm. longis, 5.5–7 cm. latis, basi plerumque rotundatis interdum obtusis, apice cuspidatis vel breviter acuminatis (apice ipso obtuso ad 4 mm. longo), margine leviter reflexis, costa supra subplana vel leviter elevata subtus prominente, nervis secundariis utrinsecus 17–22 patentibus leviter arcuatis marginem versus manifeste anastomosantibus supra subplanis subtus valde prominulis, venulis laxe reticulatis utrinque immersis vel subtus prominulis; inflorescentiis ♂ laxiuscule paniculatis 7–11 cm. longis et latis, pedunculo brevi (ad 5 mm. longo) 1.5–2 mm. diametro, ramulis paucis patentibus, floribus 5–8 in fasciculos aggregatis, bracteis minutis mox deciduis; pedicellis ad 2 mm. longis cum basi perianthii arcte ferrugineo-tomentellis (pilis minutis ramosis demum caducis); perianthio obovoideo sub anthesi 1.5–2 mm. longo fere ad basim plerumque tripartito, lobis 3 (raro 4) deltoideis subacutis; filamentis in columnam clavatam 0.2–0.5 mm. longam connatis, antheris plerumque 14, 0.5–0.6 mm. longis, columnae dorso adnatis fere ad apices connatis; inflorescentiis ♀ et fructibus desideratis.

NETHERLANDS NEW GUINEA: Bernhard Camp, Idenburg River, *Brass & Versteegh 14017* (TYPE), April 25, 1939, alt. 75 m., in rain-forest on lower mountain slope (rare tree with red-brown wood and a small amount of red latex). NORTHEASTERN NEW GUINEA: Minjem-Gebiet, Kani-Gebirges, *Schlechter 17171* (A, NY), alt. 800 m.

This is doubtless the species which Markgraf (*Bot. Jahrb.* 67: 148. 1935) referred to *H. oblongata* Merr., a Philippine species which probably does not occur in New Guinea. Compared with the new species, *H. oblongata* has the leaf-blades smaller (11–20 cm. long), somewhat elliptic and with the margins distinctly not parallel, the leaf-base acute or subacute but never rounded, the secondaries fewer (9–11), and the anastomoses fainter and farther from the margins. *Schlechter 17171* was cited by Markgraf, but I have not seen the other specimens mentioned by him, nor those which Pulle (*Nova Guinea Bot.* 8: 636. 1912) referred to *H. costulata* (Miq.) Warb. and *H. leptocarpa* Warb. Possibly all of these specimens represent *H. trifida*, the closest relative of which appears to be (as indicated by Markgraf) *H. sepikensis* Markgraf. *Horsfieldia trifida* differs from this in its larger leaf-blades, rounded leaf-base, numerous secondaries, more ample ♂ inflorescence, short pedicels, and obvious androecium-stalk.

Horsfieldia Hellwigii (Warb.) Warb. *Nova Acta Acad. Leop.-Carol.* 68: 343. 1897; Warb. in K. Schum. & Lauterb. *Fl. Deutsch. Schutzg. Südsee* 325. 1901; Markgraf, *Bot. Jahrb.* 67: 150. 1935.

NORTHEASTERN NEW GUINEA: Morobe District, Wareo, *Clemens* 1838, alt. about 550 m.

This species has previously been known from three specimens from the same general region as the above. Although I have seen none of these, the Clemens specimen seems to match Warburg's description in vegetative details and to key to the species according to Markgraf. The leaf-blades of the present specimen are up to 11.5 cm. broad, somewhat broader than those previously described. As the Clemens specimen bears the first staminate inflorescence known for the species, this is described below. The pistillate inflorescence is notably shorter, according to Warburg, but this condition is to be expected in the group and does not necessarily indicate that a different species is represented. However, the Clemens specimen should be checked against the type before it is definitely taken to represent the species.

Staminate inflorescences densely brown-tomentose on all exterior surfaces (except flowers) with irregularly and copiously branched hairs, loosely paniculate, up to 10 cm. long and 6 cm. broad, the peduncle short (up to 1 cm. long), stout (about 3 mm. in diameter), the branches spreading; flowers in loose fascicles of 2-4, the bracts minute, evanescent, the pedicels slender, 2-4 mm. long; perianth subglobose, about 3 mm. in diameter, 2-lobed nearly to base; androecium-stalk stout, very short, the anthers about 14, about 1.5 mm. long, laterally connate to apex.

Horsfieldia tuberculata (K. Schum.) Warb. Nova Acta Acad. Leop.-Carol. 68: 279, *pl.* 23. 1897; Markgraf, Bot. Jahrb. 67: 151. 1935.

SOLOMON ISLANDS: Bougainville: Siwai, *Waterhouse* 178 (A, Y) (jungle tree; common names: *Kagkag*, *Aiqil*, *Tutupun*). Teop, northeast of Bougainville: *Waterhouse* 35 (Y) (small tree about 6 m. high, the trunk about 12 cm. diam.; common name: *Vadovodovuru*).

Although the cited specimens have flowers slightly larger than usual for the species, they appear to fall into a reasonable concept of it. *Horsfieldia tuberculata* has not previously been reported east of New Ireland (Neu Mecklenburg).

Horsfieldia novo-guineensis Warb. Nova Acta Acad. Leop.-Carol. 68: 271. 1897; Warb. in K. Schum. & Lauterb. Fl. Deutsch. Schutzg. Südsee 323. 1901; Pulle, Nova Guinea Bot. 8: 635. 1912; Markgraf, Bot. Jahrb. 67: 151. 1935.

SOLOMON ISLANDS: Bougainville: Koniguru, *Kajewski* 2022, alt. 850 m. (common name: *Kisu-kisu*). Ysabel: Sigana, *Brass* 3460. Guadalcanal: Berande, *Kajewski* 2444 (common name: *Ni-niu*); Uulolo, Tutuve Mt., *Kajewski* 2554, alt. 1200 m.; Sorvorhio

basin, *Kajewski* 2710, alt. 200 m. (common name: *Korvai*). San Cristoval: Huro R., *Brass* 2605 (common name: *Do-do*). Both collectors mention the tree as common in rain-forest.

Although this species has been reported from many collections in New Guinea, these are apparently the first from the Solomon Islands.

***Horsfieldia solomonensis* sp. nov.**

Arbor 10–20 m. alta ubique praeter inflorescentiae ramulos interdum arcte ferrugineo-tomentellos et partes novellas saepe puberulas glabra, cortice brunnea rimosa; ramulis subteretibus vel apicem versus leviter complanatis; petiolis anguste alatis 8–17 mm. longis circiter 2 mm. diametro; laminis papyraceis vel chartaceis siccitate umbrinis amplis elliptico-oblongis plerumque manifeste obovatis, 20–32 cm. longis, (5–) 7–15 cm. latis, basi obtusis vel subrotundatis et in petiolum decurrentibus, apice abrupte cuspidatis, margine planis vel leviter reflexis, costa lata supra subplana subtus prominente, nervis secundariis utrinsecus 13–18 patentibus marginem versus leviter arcuatis et inconspicue anastomosantibus supra subplanis vel leviter impressis subtus prominulis, venulis inconspicue et laxe reticulatis utrinque subplanis vel leviter prominulis; inflorescentiis ♂ multifloris laxe paniculatis, 6–13 cm. longis, 3–6 cm. latis, pedunculo ad 1 cm. longo et rhachi saepe flexuosa 1.5–2 mm. diametro, ramulis patentibus, floribus 4–10 in fasciculos apices ramulorum versus laxe aggregatis, bracteis mox caducis; pedicellis robustis 1.5–3 mm. longis; perianthio subgloboso vel transverse ellipsoideo valde complanato sub anthesi circiter 2 mm. longo et 2–3 mm. lato fere ad basim bilobato, lobis rotundatis; filamentis in columnam crassam sed brevissimam et inconspicuum connatis, antheris 15–21, circiter 1.5 mm. longis, columnae crassae dorso adnatis, ad apices connatis; inflorescentiis ♀ brevioribus (ad 5 cm. longis et 4 cm. latis), minus ramosis; floribus 2 vel 3 in fasciculos laxos aggregatis, pedicellis crassis ad 2 mm. longis; perianthio crasso obovoideo, 3–4 mm. longo, 2–3 mm. lato, profunde bilobato; ovario obovoideo, stigmatibus conspicue sulcatis; fructibus maturitate ellipsoideis leviter verrucosis bicostatis ad 25 mm. longis et 15 mm. latis (ad 35 × 23 mm. ex Brass), pericarpio tenui siccitate 0.5–1 mm. crasso, arillo sicco fulvo, semine ellipsoideo, testa levi siccitate cinerea.

SOLOMON ISLANDS: Bougainville: Kieta, *Kajewski* 1549 (TYPE), March 18, 1930 (tall tree to 20 m. high). Guadalcanal: Berande, *Kajewski* 2440 (medium-sized tree to 10 m. high; common name: *Tarle*; bark macerated in water and the solution drunk to check haemorrhages). Ulawa: *Brass* 2983 (excurrent tree 15 m. high, the

bark brown, fissured; flowers yellow; fruits to 3.5 cm. long and 2.3 cm. broad, obscurely 4-angled; common name: *Totonio*). The tree is said to be common in rain-forest at low altitudes. Pistillate inflorescences and fruits are described from *Brass 2983*, the other specimens bearing staminate inflorescences.

Horsfieldia solomonensis is characterized by its large thin leaf-blades with the greatest breadth usually above the middle. Its closest relative is probably *H. novo-guineensis* Warb., with narrower leaf-blades, somewhat less congested staminate flowers, fewer anthers, and smaller fruits.

***Horsfieldia pachycarpa* sp. nov.**

Arbor compacta ad 10 m. alta ubique sub fructu glabra, ramulis crassis (apices versus 3.5–5 mm. diametro) fuscis leviter biangulatis parce lenticellatis; petiolis crassis (2.5–3 mm. diametro) conspicue canaliculatis 4–6 mm. longis; laminis subcoriaceis vel chartaceis elliptico-obovatis, 17–21 cm. longis, 6–7.5 cm. latis, basi attenuatis et in petiolum decurrentibus, apice cuspidatis vel subito caudato-acuminatis (acumine 1–1.5 cm. longo acuto), margine undulatis et siccitate anguste revolutis, utrinque leviter rugulosis in sicco fuscis et saepe subtus paullo pallidioribus, costa conspicua supra subplana subtus prominente, nervis secundariis utrinsecus 11–14 arcuato-adscendentibus inconspicue anastomosantibus supra leviter impressis subtus valde prominulis, venulis immersis obscuris; fructibus ut videtur solitariis e ramulis infra folia orientibus, pedicellatis (pedicellis ad 2.5 mm. diametro et 15 mm. longis), inaequaliter subgloboso-ellipsoideis, 3.5–4 cm. longis, 3–3.7 cm. latis, longitudinaliter indistincte carinatis, pericarpio 6–14 mm. crasso extus sublevi et remote verrucoso, arillo integro, semine oblongo-ellipsoideo 22–24 mm. longo 13–15 mm. lato, testa tenui levi.

BRITISH NEW GUINEA: Biriatabu, *Brass 610* (TYPE), alt. 450 m., Nov. 11, 1925 (compact tree 10 m. high in rain-forest, the bark channelled, scaly, light brown; fruit compressed, brown).

Horsfieldia pachycarpa is well characterized by its very short stout petioles, obovate few-nerved leaf-blades, and especially by its large thick-walled fruits. In foliage it suggests both *H. tuberculata* (K. Schum.) Warb. and *H. olivaeformis* Warb., but obviously differs from both in the above-mentioned characters. The type of the new species was mentioned by Markgraf (in White, Jour. Arnold Arb. **10**: 214. 1929) as *Myristica* sp.

***Horsfieldia congestiflora* sp. nov.**

Arbor ad 15 m. vel plus alta ubique praeter inflorescentiam et partes novellas demum glabra; ramulis gracilibus subteretibus juventute arcte

ferrugineo-tomentellis; petiolis anguste alatis 8–15 mm. longis ut ramulis tomentellis; laminis chartaceis siccitate fuscis anguste elliptico-oblongis, 20–25 cm. longis, 5–8 cm. latis, basi obtusis vel subrotundatis, apice plerumque longe acuminatis interdum conspicue cuspidatis, margine subplanis, utrinque minute verrucosis vel interdum sublevibus, costa supra subplana vel leviter elevata subtus prominente, nervis secundariis utrinsecus 16–18 patentibus marginem versus inconspicue anastomosantibus supra subplanis vel inconspicue elevatis subtus prominulis, venulis laxe reticulatis supra obscuris subtus leviter prominulis; inflorescentiis ♂ amplis multifloris laxe paniculatis 3–5-plo ramosis, ad 15 cm. longis et 8 cm. latis, pedunculo gracili ut videtur ad 4 cm. longo et rhachi saepe flexuosa ramulisque conspicue ferrugineo-tomentellis (pilis copiose ramosis) demum subglabris; floribus 8–15 in fasciculos dense confertos apices ramulorum versus aggregatis, bracteis deltoideo-oblongis puberulis ad 2 mm. longis mox caducis; pedicellis gracillimis 0.5–1 mm. longis mox glabris; perianthio glabro subgloboso tenui sub anthesi 1–1.3 mm. diametro profunde bilobato, conspicue nigro-glanduloso; androecio obovoideo 0.7–1 mm. longo, stipite quam antheris paullo brevioris basi angustato, antheris 7 vel 8 apice liberis et conspicue incurvatis; inflorescentiis fructiferis crassis ad 10 cm. longis, fructibus paucis maturitate aurantiacis anguste elliptico-ovoideis, 4–5 cm. longis, 1.5–2.5 cm. latis, bicostatis, basi et apice subacutis, pericarpio basim versus ad 3 mm. distaliter circiter 1 mm. crasso extus plerumque verrucoso, arillo carnosio rubro (ex Brass), semine anguste ovoideo, testa siccitate leviter sulcata cinerea.

BRITISH NEW GUINEA: Western Division, Lower Fly River, east bank opposite Sturt Island, *Brass 8010* (TYPE), October 1936, common in rain-forest on river flood-plains (stem prominently flanged at base; bark reddish, very thick and hard, with pitted flaky surface; flowers yellow, fragrant); Palmer River, 2 m. below junction of Black River, *Brass 6969*, common in forest substage on river banks (branches drooping, leafy toward apices; fruiting inflorescences lateral on old wood). Staminate inflorescences are described from the type and fruits from *Brass 6969*.

Horsfieldia congestiflora is well-marked by its minute and densely crowded staminate flowers on ample inflorescences which are tomentellous, at least until anthesis. These characters readily distinguish it from other Papuan species. Its closest relative is apparently *H. pilifera* Markgraf, from which the new species differs in the above mentioned characters, its proportionately somewhat narrower leaf-blades with more obviously elongate apices and more numerous secondaries, its glandular

perianth, and its androecium with an obvious stalk and fewer anthers, which are inflexed at the apices.

MYRISTICA L.

Myristica Markgraviana sp. nov.

Arbor, ramulis gracilibus juvenilibus leviter angulatis arcte et densissime ferrugineo-tomentellis demum teretibus cinereis glabris; petiolis supra complanatis 15–25 mm. longis ut ramulis juventute tomentellis mox glabris; laminis chartaceis fuscescentibus oblongo-ellipticis, 12–17 cm. longis, 5–8 cm. latis, basi obtusis vel subacutis, apice ut videtur cuspidatis vel breviter acuminatis, supra saepe nitidis praeter costam interdum tomentellam glabris, subtus pallidioribus et (praecipue ad nervos) parce brunneo-tomentellis demum glabris, costa valida supra subplana subtus prominente, nervis secundariis utrinsecus 12–15 patentibus rectis margines versus arcuatis et inconspicue anastomosantibus supra impressis subtus valde prominulis, venulis obscuris interdum supra leviter impressis et subtus inconspicue prominulis; inflorescentiis ♂ axillaribus paucifloris 3–6 cm. longis pauciramosis ubique densissime ferrugineo-velutinis (pilis saepe ad 1.5 mm. longis infra medium dense et breviter plumosis), pedunculo brevi vel subnullo et rhachi 2–3 mm. diametro; floribus 2–5 in fasciculos ad apices inflorescentiae ramulorum aggregatis vel interdum apices versus solitariis, bracteis parvis, pedicellis validis sub anthesi 6–13 mm. longis apice bracteola carnosae late suborbiculari-ovata rotundata circiter 2–3 mm. longa et 3–5 mm. lata intus glabra bracteolatis; perianthio crasse carnosae ellipsoideo vel obovoideo, sub anthesi 6–10 mm. longo et 5–7 mm. diametro, intus glabro, lobis 3 oblongo-deltaideis subacutis 2–4 mm. longis; androecio quam perianthio paullo brevioris, stipite 1–2 mm. longo crasso (0.6–0.8 mm. diametro) striato, antheris 16 vel 17, 4–7 mm. longis, ad columnam crassam subtrigonam adnatis.

NORTHEASTERN NEW GUINEA: Morobe District, Quembung, *Clemens 1142* (TYPE), alt. 650–900 m., December 11, 1935; Minjem region, Kaulo, near Stephansort, *Schlechter 16789* (A, NY), alt. 300 m.

The Schlechter specimen was cited by Markgraf (*Bot. Jahrb.* **67**: 158. 1935) as *M. philippensis* Lam., which probably does not occur in New Guinea and which differs from *M. Markgraviana* in its more numerous staminate flowers with shorter pedicels, much larger bracteoles, and closer and paler tomentum. The leaf-blades of the Philippine species average considerably longer than those of the new species and have more numerous secondaries. Among Papuan species, *M. Markgraviana* is perhaps closest to *M. velutina* Markgraf and *M. cucullata* Markgraf, but

the type of inflorescence, the broadly ellipsoid perianth, the pubescence, and leaf-characters readily distinguish it.

Myristica fusca Markgraf, Bot. Jahrb. **67**: 158. 1935.

NETHERLANDS NEW GUINEA: Bernhard Camp and vicinity, Idenburg River, *Brass & Versteegh 13185*, alt. 800 m., frequent in rain-forest on slopes (tree 22 m. high, the trunk 50 cm. diam., the crown not wide-spreading, the bark 15 mm. thick, black, scaly, exuding a red sap, the wood red-brown); *Brass & Versteegh 13545*, alt. 100 m., frequent in rain-forest on lower mountain slopes (tree 29 m. high, the trunk 40 cm. diam., the crown, bark, and wood as above, the flowers yellow).

This well-marked species has been reported only from the three collections mentioned by Markgraf from Northeastern New Guinea. The following description of the fruit, previously apparently unknown, is taken from *Brass & Versteegh 13185*:

Fruiting pedicels terete, stout (5–6 mm. diam.), about 1 cm. long; fruits narrowly ellipsoid, 4.5–6 cm. long, 2–3 cm. diam., persistently and densely brown-tomentellous, obtuse at base, subacute or bluntly mucronate at apex, the pericarp about 1.5 mm. thick, the aril deeply lacinate, the seed oblong-ellipsoid, up to 3.5 cm. long and 1.8 cm. diam., dark brown when dried.

Myristica Hollrungii Warb. Nova Acta Acad. Leop.-Carol. **68**: 490. 1897; Warb. in K. Schum. & Lauterb. Fl. Deutsch. Schutzg. Südsee 328. 1901; Markgraf, Jour. Arnold Arb. **10**: 213. 1929; Markgraf, Bot. Jahrb. **67**: 159. 1935.

BRITISH NEW GUINEA: Western Division, Wuroi, Oriomo River, *Brass 5765* (A, NY), *5766* (A, NY) (the principal tree on low river-banks frequently covered by tidal backwater; erect tree 15–20 m. tall, the bark dark gray and rough, the lower trunk frequently producing clumps of long stout down-turned adventitious roots, the branchlets and leaf-nerves yellowish, the leaf-blades smooth, glaucous beneath; fruit yellow-green, to 4.5 cm. long and 3.3 cm. broad, the aril red); east bank of lower Fly River, opposite Sturt Island, *Brass 8008* (the characteristic tree of a specialized type of tall forest restricted to low flood-plains frequently inundated by high tides, attaining a height of over 30 m. and a girth of 2 m., the trunk long and straight, supporting a spreading crown on rather weak branches, and with a great development of *Rhizophora*-like flying-buttress roots at base; leaves glaucous beneath; fruit yellow, ovate, about 4 cm. long, the aril red; vernacular name: nutmeg mangrove).

Although several specimens of this species have been mentioned by Markgraf, the above records are listed because, to the best of my knowledge, the peculiar habit and habitat have not otherwise been detailed.

***Myristica Kajewskii* sp. nov.**

Arbor ad 20 m. alta ubique praeter fructus et probabiliter inflorescentiam glabra, ramulis robustis (apices versus 3–6 mm. diametro) subteretibus saepe striatis fuscis vel nigrescentibus; petiolis crassis (3–4 mm. diametro) supra canaliculatis 2.5–4 cm. longis; laminis subcoriaceis siccitate fusco-olivaceis elliptico-oblongis, 20–33 cm. longis, 7–13 cm. latis, basi rotundatis vel subobtusis et in petiolum breviter decurrentibus, apice subacutis vel obtusis, margine anguste recurvatis, supra saepe nitidis, subtus pallidioribus et canescentibus, costa valida supra leviter elevata subtus valde prominente, nervis secundariis utrinsecus 17–25 patentibus margines versus arcuatis et anastomosantibus supra subplanis vel leviter impressis subtus valde prominulis, venulis immersis vel interdum supra obscure impressis; fructibus axillaribus ut videtur solitariis, pedunculo crassissimo (9–12 mm. diametro) 1.5–2 cm. longo plus minusve verrucoso saepe obscure ferrugineo-tomentello; fructibus ovoideo-ellipsoideis, maturitate 5–7 cm. longis et 4–5.5 cm. latis (ad 8.5×7.5 cm. ex Kajewski), utrinque subrotundatis, apice saepe obscure apiculatis, extus rugosis densissime et arcte ferrugineo-tomentellis, pericarpio lignoso 5–10 mm. crasso, arillo fere a basi in lacinias latas paucas fisso, semine elliptico-oblongo, 30–35 mm. longo, 17–22 mm. lato, arilli impressionibus leviter sed distincte sulcato, testa dura castanea circiter 0.8 mm. crassa.

SOLOMON ISLANDS: Bougainville: Kupei Gold Field, *Kajewski* 1736, alt. 1000 m. (large tree to 20 m. high, the leaves silvery beneath); Lake Luralu, Koniguru, Buin, *Kajewski* 2068, alt. 1500 m. (tree to 10 m. high, growing in a region of stunted forest; fruit to 8.5 by 7.5 cm., with a spicy fragrance). Guadalcanal: Uulolo, Tutuve Mt., *Kajewski* 2613 (TYPE), alt. 1200 m., May 2, 1931 (large tree to 20 m. high, with fair-sized buttresses; common name: *Hig-hambure*; bark macerated and the liquid drunk to check haemorrhages).

Myristica Kajewskii, which the collector notes as common in rain-forest at the listed altitudes, is characterized by its large long-petioled leaves and extremely large thick-walled pubescent fruits. As all the specimens lack flowers, it is difficult to relate the species accurately, but on other characters it suggests *M. Holtrungii* Warb., a lowland Papuan species with shorter petioles and smaller glabrous fruits.

***Myristica petiolata* sp. nov.**

Arbor ubique praeter fructus et certe inflorescentiam (non visam) glabra, ramulis (apices versus 3–5 mm. diametro) subteretibus rugosis siccitate fuscis; petiolis 2.5–6 cm. longis 2–3.5 mm. diametro valde rugosis supra canaliculatis; laminis subcoriaceis fusco-olivaceis elliptico-oblongis, 19–23 cm. longis, 5–9 cm. latis, basi rotundatis vel late obtusis et in petiolum decurrentibus, apice cuspidatis vel breviter acuminatis (acumine ipso obtuso), utrinque levibus et concoloribus, costa supra subplana vel acute prominula subtus valde prominente, nervis secundariis utrinsecus 22–25 patentibus rectis margines versus obscure anastomosantibus supra subplanis subtus paullo prominulis, venulis immersis; fructibus solitariis vel 2–4 ad apicem pedunculi crassi (4–5 mm. diametro) ad 1 cm. longi verrucosi aggregatis, pedicellis brevibus crassis arcte tomentellis; fructibus oblongo-ellipsoideis, 3–3.5 cm. longis, 1.7–2 cm. latis, basi rotundatis, apice obtuse apiculatis, densissime et arctissime spadiceo-velutinis (pilis ad 2 mm. longis persistentibus), pericarpio lignoso 1.5–3 mm. crasso, arillo fere a basi in lacinias latas fisso, semine ellipsoideo.

SOLOMON ISLANDS: Ysabel: Tatamba, *Brass 3434A* (TYPE), in hardwood forests, alt. 50 m., January 5, 1933 (tall slender tree, the bark gray, slightly fissured, the branchlets rusty brown).

As the above-cited collection bears only fruits and leaves, it cannot accurately be placed within the genus, but I feel certain that it represents an undescribed species. It is characterized by its long-petioled leaves and by the remarkably long and thick tomentum of its fruits. A species of somewhat similar aspect is the Papuan *M. subcordata* Bl., with petioles hardly exceeding 1 cm. in length and with paler and less dense fruit-pubesence. The discovery of flowers, however, may prove *M. petiolata* to have other relationships.

***Myristica pachyphylla* sp. nov.**

Arbor ad 22 m. alta praeter inflorescentiam et fructus immaturos breviter pilosos glabra, trunco gracili ad 50 cm. diametro, ramulis gracilibus teretibus interdum leviter flexuosis; petiolis gracilibus (1–2 mm. diametro) 8–15 mm. longis conspicue canaliculatis; laminis tenuiter coriaceis fusco-olivaceis ovato-oblongis, 9–17 cm. longis, 3–7 cm. latis, basi obtusis et in petiolum decurrentibus, apice gradatim et longe attenuatis (acumine gracili 1–2 cm. longo), margine saepe anguste recurvatis, subtus paullo pallidioribus et interdum parce brunneo-punctatis, costa valida supra conspicue elevata subtus prominente, nervis secundariis utrinsecus 12–22 patentibus rectis margines versus anastomosantibus

supra acute impressis subtus prominulis, in intervallis nervis brevioribus tenuioribusque parallelis interdum interjectis, venulis plerumque supra impressis subtus obscuris; inflorescentiis ♂ supraaxillaribus vel ex axillis defoliatis 1.2–2 cm. longis plurifloris ubique sub anthesi minute et sparse brunneo-pilosis demum glabris, pedunculo gracili (circiter 1 mm. diametro) 3–10 mm. longo, rhachi cicatricibus florum delapsorum conspicue ornata, bracteis minutis ovatis mox caducis; floribus inflorescentiae apicem versus congestis, pedicellis gracilibus ad 4 mm. longis bracteola inconspicua ovata rotundata 0.5–1 mm. longa paullo infra floris basim ornatis; perianthio carnosio cylindrico-ellipsoideo, sub anthesi 5.5–6.5 mm. longo et basim versus 2–2.5 mm. diametro, lobis 3 deltoideis subacutis circiter 1 mm. longis; androecio 4–4.5 mm. longo, stipite glabro gracili 2–3 mm. longo, antheris 10 vel 11 circiter 1.5 mm. longis, columna in apicem sterilem brevem interdum obtusa; fructibus solitariis vel binis, pedunculo (e pedicello haud distinguitur) 1.5–3 mm. crasso 7–13 mm. longo glabro; fructibus oblongo-ovoideis, 3.5–4.5 cm. longis, 1.5–2 cm. latis, utrinque obtusis (juventute subattenuatis et apice mucronatis), arcte spadiceo-puberulis mox glabris, pericarpio 1–2 mm. crasso, arillo fere a basi laciniis angustis diviso, semine ellipsoideo.

NETHERLANDS NEW GUINEA: 15 km. southwest of Bernhard Camp, Idenburg River, *Brass* 12147, alt. 1800 m. (slender tree 5–6 m. high, frequent in seral growths of openings in mossy forest; fruit orange, the aril red); *Brass* 12173 (TYPE), alt. 1800 m., January 1939 (slender tree 6–7 m. high, common in mossy forest substage); *Brass & Versteegh* 11925, alt. 1780 m. (tree 19 m. high, the trunk 35 cm. diam., the crown small, the bark black, fairly smooth, about 7 mm. thick, the wood light brown; fruits yellow-brown; rare in primary forest on slope of a ridge); 6 km. southwest of Bernhard Camp, *Brass & Versteegh* 12597, alt. 1250 m. (tree 22 m. high, the trunk 49 cm. diam., the crown not wide-spreading, the bark black, 5 mm. thick, with red latex, the wood light red; fruits green; occasional tree of primary forest on a ridge).

The type bears staminate inflorescences, the other specimens fruits. *Myristica pachyphylla* is closely related to *M. crassipes* Warb., differing in its thicker and proportionately broader leaf-blades, its much more slender peduncle (of both staminate and fruiting inflorescence), and its glabrous androecium-stalk.

***Myristica multinervia* sp. nov.**

Arbor ubique praeter inflorescentiam glabra, ramulis crassis (apices versus 4–6 mm. diametro) subteretibus juventute purpurascens demum fusco-cinereis et copiose lenticellatis; petiolis 2.5–3 mm. dia-

metro 17–23 mm. longis profunde canaliculatis nigrescentibus; laminis siccitate tenuiter coriaceis oblongis, 20–32 cm. longis, 8.5–10 cm. latis, basi rotundatis, apice ut videtur breviter acuminatis, utrinque siccitate fuscis vel subtus pallidioribus, costa valida supra plana subtus prominente, nervis secundariis utrinsecus 27–33 patentibus margines versus anastomosantibus supra impressis subtus valde prominulis, venulis immersis; inflorescentiis ♂ axillaribus vel e ramulis infra folia orientibus, pedunculo brevi crasso et rhachi cicatricibus florum delapsorum densissime ornata 5–7 mm. diametro sub anthesi 15–35 mm. longis, bracteis mox caducis; floribus apicem rhacheos versus congestis, ubique extus breviter et densissime fulvo-tomentellis, pedicellis sub anthesi 6–8 mm. longis et circiter 1.5 mm. diametro bracteola deltoidea subacuta 4–5 mm. longa et lata apice ornatis; perianthio cylindrico-urceolato, sub anthesi 9–11 mm. longo et circiter 4 mm. diametro, lobis 3 oblongo-deltoideis obtusis 1.5–2 mm. longis; androecio 6–7.5 mm. longo, stipite crasso 2–3 mm. longo dense et breviter stramineo-sericeo, antheris 14–16, 3–3.5 mm. longis, columna in apicem sterilem conspicuum acutum circiter 1 mm. longum producta.

BRITISH NEW GUINEA: Central Division, Dieni, Ononge Road, *Brass 3914* (A, TYPE, NY), alt. 500 m., April 29, 1933 (specimens brought down in thick forest by a falling tree; habit uncertain; leaves pale-veined above, iridescent pale brown beneath; flowers covered with yellow-brown pubescence).

This very distinct species is readily recognized by its firm many-nerved leaf-blades with rounded base and its short stout many-flowered inflorescences. It has essentially the same type of inflorescence as *M. subalulata* Miq., from which it differs in its terete branchlets, stouter rachises, shorter pedicels, and minor characters of foliage.

***Myristica sphaerosperma* sp. nov.**

Arbor ad 13 m. alta ubique praeter fructus glabra, ramulis subteretibus distaliter 3–5 mm. diametro fuscis verrucosis; petiolis crassis (3–4 mm. diametro) leviter canaliculatis nigrescentibus 17–25 mm. longis; laminis subcoriaceis elliptico-oblongis, 20–32 cm. longis, 6–10.5 cm. latis, basi rotundatis vel obtusis, apice caudato-acuminatis (acumine 15–25 mm. longo angusto obtuso), margine leviter recurvatis, supra fuscis, subtus cineraceis vel argenteis, costa valida supra subplana vel leviter elevata subtus valde prominente, nervis secundariis utrinsecus 20–25 arcuato-patentibus margines versus conspicue anastomosantibus supra acute impressis subtus prominentibus, venulis supra leviter impressis vel planis subtus immersis vel paullo prominulis; fructibus infra folia solitariis,

pedunculo crasso (5–7 mm. diametro) ruguloso ad 15 mm. longo; fructibus subglobosis ad 6 cm. diametro utrinque rotundatis extus rugosis densissime et arctissime rufo-tomentellis, pericarpio duro 3–4 mm. crasso, arillo fere a basi in lacinias numerosas angustas fissis, semine subgloboso 3–3.5 cm. diametro, arilli impressionibus distincte sulcato, testa pallide badia dura 0.7–1 mm. crassa.

BRITISH NEW GUINEA: Central Division, Mt. Tafa, *Brass 4174* (A, TYPE, NY), alt. 2100 m., June 1, 1933 (rare, in foothill forest substage; erect shortly branched tree 13 m. high, with slightly fissured dark brown bark; leaves silver-gray beneath, the nerves brownish green beneath; fruit rufous-brown, the aril of unripe fruit pale yellow).

In the absence of inflorescences, this species cannot be accurately related; it is, however, amply characterized by its large thick many-nerved leaf-blades, which are whitish beneath, and by its large subglobose pubescent fruit. Its closest relative may be *M. argentea* Warb., a species with fewer secondary nerves and an ellipsoid fruit.

***Myristica Brassii* sp. nov.**

Arbor ad 29 m. alta ubique praeter inflorescentiam et fructus et partes novellas brunneo-puberulas glabra, trunco ad 70 cm. diametro, ramulis crassis subteretibus fusco-cinereis; petiolis crassis (circiter 3 mm. diametro) 13–20 mm. longis canaliculatis nigrescentibus; laminis tenuiter coriaceis vel chartaceis ovato-oblongis, 15–24 cm. longis, 6.5–10 cm. latis, basi rotundatis vel obscure subcordatis, apice acutis vel gradatim acuminatis, margine saepe revolutis, supra fuscis, subtus paullo pallidioribus, costa valida supra prominente subtus valde prominente, nervis secundariis utrinsecus 15–17 patentibus margines versus adscendentibus et inconspicue anastomosantibus supra impressis vel costam versus prominulis subtus prominentibus, venulis utrinque obscuris vel supra immersis et subtus leviter prominulis; inflorescentiis ♂ supraaxillaribus vel e ramulis infra folia orientibus brevibus paucifloris sub anthesi ubique pallide ferrugineo-sericeis (pilis adpressis 0.2–0.5 mm. longis), pedunculo subglomerulato ad 5 mm. longo et crasso cicatricibus florum delapsorum ornato, bracteis parvis mox caducis; floribus congestis, pedicellis crassis sub anthesi 6–8 mm. longis bracteola crasso-carnosa late semiorbiculari ad 1 mm. longa 2–4 mm. infra floris basim ornatis; perianthio carnosio urceolato-ovoideo, sub anthesi 12–13 mm. longo et basim versus circiter 5 mm. diametro, demum subglabrescente, apicem versus contracto, lobis 3 oblongo-deltaideis subacutis, 1.5–2 mm. longis, 2–2.5 mm. latis; androecio quam perianthio paullo brevioris, stipite glabro crasso striato 4–5 mm. longo, antheris 15–20, 4–5.5 mm. longis,

columna in apicem sterilem 0.5–1 mm. longum subacutum producta; inflorescentiis ♀ plus minusve similibus dense tomentellis (pilis 0.5 mm. longis patentibus persistentibus basim versus plumulosis); pedicellis bracteola 1–1.5 mm. infra floris basim ornatis; perianthio brevior (sub anthesi 10–11 mm. longo) circiter 6 mm. diametro; ovario ovoideo sub anthesi 4–5 mm. diametro dense pallide ferrugineo-sericeo ad apicem angustato et glabro, stigmate profunde sulcato; fructibus ut videtur solitariis, pedicello crasso (ad 10 mm. diametro) 15–20 mm. longo demum glabro; fructibus subglobosis 6–7 cm. diametro brunneo-tomentellis, pericarpio lignoso ad 1 cm. crasso, arillo fere a basi in lacinias angustas numerosas fissis, semine subgloboso in specimine nostro parvo (ad 2 cm. diametro).

NETHERLANDS NEW GUINEA: 15 km. southwest of Bernhard Camp, Idenburg River, *Brass 12254* (TYPE), alt. 1700 m., January 1939 (tree 6 m. high in a rain-forest gully; flowers fragrant, cream-colored); 6 km. southwest of Bernhard Camp, *Brass & Versteegh 12547*, alt. 1150 m. (frequent in primary forest, on slope of a ridge; tree 29 m. high, the trunk 70 cm. diam., the crown not wide-spreading; flowers yellow; fruits dark brown; bark 24 mm. thick, black, exuding abundant red latex; wood red).

The type bears staminate inflorescences, the other specimen pistillate inflorescences and fruits. This well-marked species bears a relationship to *M. velutina* Markgraf and *M. cucullata* Markgraf, differing from the former in its terete branchlets, broader leaf-blades, and much larger fruits, from the latter in its more obvious venation and small bracteoles, and from both in its larger flowers, long androecium-stalk, and several obvious foliage characters.

***Myristica Archboldiana* sp. nov.**

Arbor ad 30 m. alta, ramulis apices versus purpurascens angulatis vel leviter 4-alatis; petiolis ut ramulis glabris gracilibus (1.5–2 mm. diametro) 2.5–3.5 cm. longis canaliculatis; laminis tenuiter coriaceis vel chartaceis elliptico-oblongis, 13–15 cm. longis, 6.5–7.5 cm. latis, basi rotundatis vel leviter subcordatis, apice cuspidatis vel breviter acuminatis, margine undulato-recurvatis, supra glabris fuscis, subtus indumento persistente arcte et densissime ferrugineo-tomentellis, costa supra acute elevata subtus prominente, nervis secundariis utrinsecus 17–21 erecto-patentibus rectis haud vel indistincte conjunctis supra acute impressis subtus valde prominulis, venulis immersis utrinque obscuris; fructibus 2 vel 3 apicem pedunculi brevis versus aggregatis, pedunculo ad 25 mm. longo et 5 mm. diametro glabro cortice soluto vestito, pedi-

cellis glabris crassis brevibus (ut videtur ad 3 mm. longis); fructibus obovoideis ad 7 cm. longis et 4 cm. diametro (paullo supra medium), basi angustatis apice rotundatis vel late obtusis, pericarpio suberoso vel demum fibroso 8–12 mm. crasso extus persistente et densissime arcte rufo- vel ferrugineo-tomentello, arillo in lacinias latas fisso, semine ellipsoideo in specimine nostro parvo (ad 2.5 cm. longo).

BRITISH NEW GUINEA: Western Division, Palmer River, 2 miles below junction with Black River, *Brass 6982* (TYPE), alt. 100 m., June 1936 (common in forest on the lower ridges; large canopy tree 30 m. tall, with a clear straight bole spurred at the very base, the bark pale brown, lenticellate, reddish when cut; leaf-blades brown beneath; ribbed above with impressed nerves; fruit rufous-brown, the aril yellow).

As this species is represented only by foliage and fruit, it cannot be accurately related, but I feel certain that it is not to be matched among described species. It is characterized by long petioles, elliptic-oblong bicolored leaf-blades which are closely and densely tomentellous beneath, and large obovoid pubescent thick-walled fruits. In fruit, the new species suggests *M. costata* Warb., from which it differs notably in the other above-mentioned characters. Discovery of flowers may indicate that *M. Archboldiana* is elsewhere related, but its leaf and fruit characters are sharply distinct from those of described Papuan species.

Myristica Schleinitzii Engl. Bot. Jahrb. 7: 455. 1886; Warb. Nova Acta Acad. Leop.-Carol. 68: 392, pl. 19. 1897; Markgraf, Bot. Jahrb. 67: 166. 1935.

Myristica faroensis Hemsl. Ann. Bot. 5: 506. 1891.

SOLOMON ISLANDS: Bougainville: Kieta, *Kajewski 1582*, common in rain-forest (small tree, to 17 m. high; fruit yellow-green when ripe); Karngu, Buin, *Kajewski 2236*, common in rain-forest close to seashore (small tree about 15 m. high; leaves silvery beneath; fruit yellow-green, up to 43 mm. long and 15 mm. broad, the aril bright scarlet; common name: *U-we-pekira*). Navotana I., N'Gela group: *Brass 3237*, on summit of island, alt. 50 m. (slender tree 8 m. tall; leaves gray beneath; fruit pale yellow).

This species has been reported from many collections in New Guinea and the surrounding islands, but apparently it has been previously represented from the Solomons only by Guppy's type of *M. faroensis* from Faro, in Bougainville Straits.

Myristica inutilis Rich; A. Gray, Bot. U. S. Expl. Exped. 1: 34. 1854; Guillaumin, Jour. Arnold Arb. 14: 59. 1933; Christophersen, B. P. Bish. Mus. Bull. 128: 87. 1935.

SOLOMON ISLANDS: Bougainville: Kieta, *Kajewski 1587*, alt. 100 m. (large tree to 20 m. high; leaf-blades light brown beneath; fruit 4.5 cm. long, 2 cm. diam., covered with short brown felt-like tomentum); Lake Luralu, Koniguru, Buin, *Kajewski 2101*, alt. 1000 m. (tree to 20 m. high; leaf-blades golden beneath; fruit 3 cm. long, 1.8 cm. diam., short brown-tomentellous; common name: *Chigui*). San Cristoval: Star Harbour, *Brass 3106*, near sea-level (small slender tree with milky sap; leaf-blades dark green above, brown beneath; fruit rusty brown). The collectors report the species as common in rain-forest.

Myristica inutilis, originally described from Samoa and recently reported by Guillaumin from the New Hebrides, is now found to extend into the Solomons. I have carefully compared the cited specimens with those mentioned by Guillaumin (*Kajewski 44, 220, and 757*) and with an extensive series from Samoa, and am unable to find any appreciable differences among specimens from the three groups. The New Hebrides specimens bear an unpublished herbarium name, but I have no reason to doubt the correctness of Guillaumin's determinations. The absence of the species from Fiji is noteworthy and is doubtless due to lack of abundant material from that group.

Myristica inutilis is a close relative of the Papuan *M. Buchneriana* Warb., from which it is readily distinguished by the presence of copious close pale tangled tomentum on the lower surfaces of leaf-blades. In floral characters the two species are extremely close, *M. inutilis* having a larger bracteole and fewer anthers; in fruit the similarity is also striking.

***Myristica salomonensis* Warb. Nova Acta Acad. Leop.-Carol. 68: 527. 1897.**

SOLOMON ISLANDS: Guadalcanal: Uulolo, Tutuve Mt., *Kajewski 2552*, common in rain-forest, alt. 1200 m. (tree to 25 m. high, the trunk straight; fruit brown-tomentellous, with a strong spicy odor; common name: *Mansi-mansi*). Malaita: Quoi-mon-apu, *Kajewski 2373* (A, US), common in rain-forest, alt. 50 m. (small tree to 10 m. high; fruit brown-tomentellous, up to 3 by 2.5 cm.; common name: *Pai-passi*). San Cristoval: Magoha River, *Brass 2744*, common in lowland rain-forest (tree 15 m. high, the bark dark brown, slightly furrowed and flaky, the wood pale brown with darker streaks; fruit tomentellous, about 3 by 2.5 cm.).

The listed specimens are all in fruiting condition, as was the type and only previously known collection, *Comins 121*, from San Cristoval. Although I have not seen the latter specimen, I have little doubt of the

determination, as Warburg's description is ample. The leaves of the Brass specimen are slightly larger (to 17 by 6 cm.) than those mentioned in the original description. While the place of *M. salomonensis* in the genus must remain uncertain until flowers are available, it seems to be allied to *M. Buchneriana* Warb., differing obviously in fruit shape and details of foliage.

***Myristica platyphylla* sp. nov.**

Arbor ad 20 m. alta, trunco interdum conspicue erismatico, ramulis crassis subteretibus vel obscure biangulatis; petiolis crassis (3–4 mm. diametro) 17–25 mm. longis conspicue canaliculatis; laminis chartaceis elliptico- vel leviter obovato-oblongis, 20–32 cm. longis, 7–13 cm. latis, basi obtusis, apice ut videtur breviter cuspidatis, supra fuscis nitidis glabris, subtus indumento pallide brunneo-tomentello arcto persistente densissime indutis, costa valida supra lata subplana vel leviter elevata subtus valde prominente, nervis secundariis utrinsecus 25–31 erecto-patentibus rectis margines versus inconspicue anastomosantibus supra leviter impressis subtus valde prominulis, venulis immersis plerumque utrinque obscuris; inflorescentiis ♂ supraaxillaribus vel e ramulis infra folia orientibus 1–1.5 cm. longis multifloris ubique praeter pedunculum densissime ferrugineo-tomentellis (pilis minutis e basi pauciramosis), pedunculo crasso basim versus 2–4-furcato, rhachibus brevibus crassis conspicue cicatricosis, bracteis minutis mox caducis; floribus inflorescentiae apices versus dense congestis, pedicellis gracilibus ad 4 mm. longis bracteola tenuiter carnosae deltoideo-ovata 2–2.5 mm. longa et lata subacuta intus glabra apice ornatis; perianthio ellipsoideo 4.5–5 mm. longo 2–3 mm. diametro, lobis 3 deltoideis subacutis 1–1.5 mm. longis et latis; androecio 4–4.5 mm. longo, stipite crasso striato 1.5–2 mm. longo basim versus pilis brevibus stramineis adscendentibus obscure piloso, antheris 8 vel 9, 2–2.5 mm. longis, columna in apicem sterilem brevem obtusa; fructibus 2–4 aggregatis, pedunculo crasso brevi, pedicellis 3–5 mm. crassis 4–8 mm. longis demum glabrescentibus; fructibus late ellipsoideis circiter 3 cm. longis et 2.5 cm. latis, longitudinaliter sulcatis, utrinque rotundatis vel apice inconspicue mucronatis, pericarpio duro 3–4 mm. crasso extus densissime et arcte pallide brunneo-tomentello, arillo fere a basi in lacinias latas paucas irregulariter fisso, semine oblongo-ellipsoideo ad 20 mm. longo et 13 m. lato.

SOLOMON ISLANDS: Bougainville: Kugumaru, Buin, *Kajewski* 1916, alt. 150 m. (large tree to 20 m. high; leaf-blades brown beneath; fruit covered with brown tomentum and longitudinally dehiscing

on one side; common name: *Chigui*). Guadalcanal: Berande, *Kajewski 2442* (TYPE), near sea-level, January 14, 1931 (large tree to 20 m. high, with large buttresses; leaf-blades green above, light brown beneath; buds brown-tomentellous; common name: *Toro-bagere*; latex reported used to check nasal haemorrhages).

Myristica platyphylla, said to be common in rain-forest, seems very distinct and without close relatives among described Papuan species. It is at once distinguished by its large many-nerved leaf-blades which are persistently tomentellous beneath, its short stout branched many-flowered staminate inflorescences, and its comparatively small tomentellous fruits. According to Markgraf's key, it may be placed near *M. Buchneriana* Warb., but the differences in foliage and fruit are very pronounced. A closer relative appears to be the Philippine *M. Wenzelii* Merrill, a species with ultimately glabrous leaf-blades, simple or obscurely forked staminate inflorescences, shorter pedicels, and more numerous anthers. The type of *M. platyphylla* bears staminate inflorescences, the other specimen being in fruit.

***Myristica cerifera* sp. nov.**

Arbor ad 25 m. alta ubique praeter inflorescentiam et fructus glabra, ramulis subteretibus crassis (3–6 mm. diametro) rugosis; petiolis nigrescentibus crassis (3–4 mm. diametro) 15–25 mm. longis conspicue canaliculatis; laminis chartaceis elliptico-oblongis, 30–40 cm. longis, 8–12.5 cm. latis, basi obtusis vel rotundatis, apice obtusis vel obtuse cuspidatis, margine paullo undulatis, supra fuscis nitidis, subtus levibus et manifeste argenteo- vel cinereo-ceriferis, costa valida supra lata et prominente subtus valde prominente, nervis secundariis utrinsecus 25–30 basim versus valde adscendentibus distaliter arcuato-adscendentibus margines versus inconspicue anastomosantibus supra leviter impressis subtus valde prominulis, venulis immersis utrinque obscuris vel supra leviter impressis et subtus minute prominulis; inflorescentiis ♀ vetustis e ramulis defoliatis orientibus vermiformibus 2.5–3.5 cm. longis multifloris, pedunculo brevi crasso 2- vel 3-furcato, rhachibus crassis (6–10 mm. diametro) conspicue et densissime cicatricosis; floribus inflorescentiae apices versus dense congestis ubique extus dense et breviter ferrugineo-tomentellis, pedicellis brevissimis bracteola chartacea late ovata circiter 3 mm. longa et 7 mm. lata obtusa apice ornatis; perianthio crasse carnosio ellipsoideo 6–7 mm. longo (ante anthesi) 5–6 mm. diametro, lobis 3 vel 4 deltoideo-oblongis acutis circiter 3 mm. longis et latis; ovario ovoideo densissime brunneo-strigoso, stigmatate profunde lobato

glabro; fructus pedunculo pedicellisque valde incrassatis; fructibus paucis (solitariis?) oblongo-ellipsoideis, 5–8 cm. longis, 4–5 cm. latis, utrinque rotundatis vel apice inconspicue mucronatis, pericarpio lignoso 5–10 (ad 17 ex Kajewski) mm. crasso extus conspicue et valdissime verrucoso arcte brunneo-tomentello demum glabro, arillo crasso fere a basi in lacinias latas fesso, semine oblongo-ellipsoideo ad 45 mm. longis et 18 mm. latis (ad 56 × 21 mm. ex Kajewski), testa castanea dura circiter 1 mm. crassa arilli impressionibus conspicue sulcata.

SOLOMON ISLANDS: Bougainville: Kugumaru, Buin, *Kajewski 1827* (TYPE), alt. 150 m., June 7, 1930, common in rain-forest (large tree to 25 m. high; leaf-blades silvery beneath; fruit brown, rough-surfaced; common name: *Or-wu-pekira*; seeds pulverized and used to stop leaks in canoes); Siwai, *Waterhouse 166* (NY, Y) (large tree; fruits woody, the aril red; common names: *Voraga*, *Mu*).

Both the cited specimens are in fruit, and the type also retains some old pistillate inflorescences. The species is readily recognized by its large leaf-blades, which are covered on the lower surface by a uniformly thick layer of wax, its stout vermicular inflorescences, and its large thick-walled verrucose fruits. Its leaf-shape and the form of its inflorescence indicate a relationship with the preceding new species (*M. platyphylla*), but the waxy foliage and the fruits yield strikingly distinct characters.

***Myristica Clemensii* sp. nov.**

Arbor ubique praeter inflorescentiam et partes novellas parce et breviter ferrugineo-strigillosas glabra, ramulis gracilibus subteretibus interdum leviter flexuosis; petiolis gracilibus (1–1.5 mm. diametro) nigrescentibus 12–17 mm. longis canaliculatis; laminis chartaceis siccitate fuscis et concoloribus anguste elliptico-oblongis, 8–11 cm. longis, 1.8–2.8 cm. latis, basi acutis et in petiolum decurrentibus, apice obtusis vel gradatim et obtuse acutis, margine valde revolutis, subtus inconspicue ceriferis, costa valida supra impressa vel leviter elevata subtus prominente, nervis secundariis utrinsecus 15–20 brevibus patentibus rectis inconspicue anastomosantibus supra leviter impressis subtus subplanis vel inconspicue prominulis, venulis immersis vel supra paullo impressis; inflorescentiis ♂ supraaxillaribus simplicibus, pedunculo circiter 2 mm. longo et 1.5 mm. diametro apice incrassato et paucifloro mox glabro, bracteis parvis ovatis strigosis; floribus fasciculatis, pedicellis gracilibus sub anthesi 3–4 mm. longis bracteola ovato-deltaidea circiter 1 mm. longa et 2 mm. lata obtusa apice ornatis; perianthio cylindrico-ellipsoideo 5–6 mm. longo 2–3 mm. diametro, lobis 3 (vel 4) oblongo-deltaideis circiter 2

mm. longis et latis; androecio 3.5–5 mm. longo, stipite crasso 1–1.5 mm. longo parce et breviter stramineo-strigilloso, antheris 10–15, 1.5–3 mm. longis, columna in apicem sterilem conspicuum circiter 0.5 mm. longum obtusum producta.

NORTHEASTERN NEW GUINEA: Morobe District, Wareo, *Clemens 1668* (TYPE), alt. 600–650 m., January 17, 1936.

Myristica Clemensii is related to *M. Macgregorii* Warb., from which it differs in its much narrower leaf-blades, which are brownish and concolorous rather than glaucous beneath, its more numerous and less conspicuous secondary nerves, and its much shorter pedicels. In other floral characters the two species are quite similar, but foliage differences in texture and venation, as well as in shape, are pronounced.

***Myristica procera* sp. nov.**

Arbor procera, ramulis gracilibus (apices versus 2–4 mm. diametro) subteretibus juventute arcte ferrugineo-tomentellis demum glabris cinereis rugosis; petiolis crassis (2–3 mm. diametro) 12–15 mm. longis profunde canaliculatis ut ramulis juventute tomentellis; laminis subcoriaceis siccitate fusco-castaneis concoloribus elliptico-oblongis, (14–)20–25 cm. longis, 4–6 cm. latis, basi obtusis et in petiolum decurrentibus, apice gradatim et longe acutis (acumine ipso obtuso), margine leviter undulatis, supra glabris, subtus indumento pallide ferrugineo arcto persistente densissime tomentellis, costa supra leviter elevata subtus prominente, nervis secundariis utrinsecus 16–19 erecto-patentibus margines versus leviter arcuatis et anastomosantibus supra paullo impressis subtus prominulis, venulis immersis utrinque obscuris vel supra leviter impressis; fructibus solitariis axillaribus vel e ramulis inter folia orientibus, pedunculo (a pedicello haud distincto) crasso (3–3.5 mm. diametro) 6–7 mm. longo tomentello; fructibus ellipsoideis ad 2.5 cm. longis et 1.7 cm. latis, longitudinaliter conspicue sulcatis, basi obtusis, apice rotundatis et oblique apiculatis, pericarpio duro circiter 1.5 mm. crasso extus densissime et arcte ferrugineo-tomentello, arillo fere a basi in lacinias paucas latas fisso, semine oblongo-ellipsoideo.

SOLOMON ISLANDS: Y s a b e l: Tatamba, *Brass 3434* (TYPE), alt. 50 m., January 5, 1933, common in rain-forest (tall slender tree, the bark gray, slightly fissured, the branchlets rusty brown; upper surface of leaf-blades smooth, covered with gray bloom, the lower surface rusty-tomentose).

Myristica procera, a species characterized by the close persistent tomentum of the lower surface of leaf-blades and the fruit, appears not

to be closely related to any described Papuan or Pacific species, and in the absence of flowers I cannot indicate a probable relationship. In its pubescence and general leaf-shape it bears a resemblance to the Philippine *M. guatteriaefolia* A. DC., but the relationship is probably not close. At the same time and in the same locality as the type of *M. procera* was obtained, Brass collected another species in fruit, referring it to his number 3434A. I have described this above as *M. petiolata*; the two species are not closely related.

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